

## **Problematism and regulation: bodies, risk, and recovery within the context of Neonatal Abstinence Syndrome**

Whittaker, Anne; Chandler, Amy; Cunningham-Burley, Sarah; Midgley, Paula; Elliott, Lawrie; Cooper, Sarah

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## **International Journal of Drug Policy**

**Title of paper:** Problematism and regulation: bodies, risk, and recovery within the context of Neonatal Abstinence Syndrome.

**Authors:** Anne Whittaker<sup>1,2</sup>; Amy Chandler<sup>3</sup>; Sarah Cunningham-Burley<sup>3</sup>; Paula Midgley<sup>3,2</sup>; Lawrie Elliott<sup>4</sup>; Sarah Cooper<sup>2</sup>.

### **Author Affiliations:**

<sup>1</sup>University of Stirling, Scotland, UK.

<sup>2</sup>NHS Lothian, Scotland, UK

<sup>3</sup>University of Edinburgh, Scotland, UK

<sup>4</sup>Glasgow Caledonian University, Scotland, UK

**<sup>1</sup>Corresponding author:** Anne Whittaker, Associate Professor, NMAHP Research Unit, Unit 13 Scion House, University of Stirling Innovation Park, University of Stirling, Stirling, Scotland, UK, FK9 4NF. Tele: (+44) 01786 466341 Email: [Anne.Whittaker@stir.ac.uk](mailto:Anne.Whittaker@stir.ac.uk)

**Key words:** Neonatal Abstinence Syndrome; Pregnancy; Opioid Dependence; Risk; Recovery; Qualitative.

### **Abstract**

**Background:** Neonatal Abstinence Syndrome (NAS) is an anticipated effect of maternal drug use during pregnancy. Yet it remains a contested area of policy and practice. In this paper, we contribute to ongoing debates about the way NAS is understood and responded to, through different treatment regimes, or logics of care. Our analysis examines the role of risk and recovery discourses, and the way in which the bodies of women and babies are conceptualised within these.

**Methods:** Qualitative interviews with 16 parents (9 mothers, 7 fathers) and four focus groups with 27 health and social care professionals based in Scotland. All the mothers were

prescribed opioid replacement therapy and parents were interviewed after their baby was born. Data collection explored understandings about the causes and consequences of NAS and experiences of preparing for, and caring for, a baby with NAS. Data were analysed using a narrative and discursive approach.

**Results:** Parent and professional accounts simultaneously upheld and subverted logics of care which govern maternal drug use and the assessment and care of mother and baby. Despite acknowledging the unpredictability of NAS symptoms and the inability of the women who are opioid-dependent to prevent NAS, logics of care centred on ‘proving’ risk and recovery. Strategies appealed to the need for caution, intervening and control, and obscured alternative logics of care that focus on improving support for mother-infant dyads and the family as a whole.

**Conclusion:** Differing notions of risk and recovery that govern maternal drug use, child welfare and family life both compel and trouble all logics of care. The contentious nature of NAS reflects wider socio-political and moral agendas that ultimately have little to do with meeting the needs of mothers and babies. Fundamental changes in the principles, quality and delivery of care could improve outcomes for families affected by NAS.

## Introduction

Lupton (2012) argues that the bodies of infants are framed as inherently ‘vulnerable’ and ‘at risk’, a framing which contributes to the imperative that parents (particularly mothers) engage in “intense, anxious” surveillance of their infants. In this paper, we examine how this conceptualisation of the infant body as ‘at risk’ emerges in accounts of Neonatal Abstinence Syndrome (NAS), and how this surveillance is connected to wider systems which seek to regulate drug-using bodies (Fraser & valentine, 2008). We argue that the obligation to monitor and measure is particularly acute for the ‘vulnerable’ *drug-exposed* neonate, and this

has implications for the governance of mothers who are drug-dependent who gave rise to their infants' 'vulnerable' condition. Lupton's work addresses 'routine' antenatal and postnatal care, and she refers to parental (and professional) monitoring of 'vulnerable' infant bodies within the context of a normative 'risk culture', whereby any potential risks should be minimised: we show how this is implicated in accounts of NAS.

NAS is the most frequently cited 'complication' of maternal drug use during pregnancy – portrayed as a risk to the newborn baby, the mother-infant relationship, caregiving, child development and child welfare (McQueen, Murphy-Oikonen, & Desaulniers, 2015). NAS refers to a constellation of drug withdrawal symptoms identified in babies born to mothers who have used drugs of dependence during pregnancy, notably opioids (Hudak, et al., 2012). Not all infants develop symptoms but those who do normally display signs within the first few days after birth. The condition is relatively short-lived, lasting from several days to weeks, and symptoms vary considerably in onset, severity and duration (American College of Obstetrics and Gynecologists, 2017). Symptoms primarily involve the gastrointestinal, autonomic and central nervous system, resulting in a neonate who can be difficult to feed, settle and console (Hudak et al 2012) – see Table 1.

Table 1: Symptoms of severe NAS

Central Nervous system	Irritability (high-pitched/excessive crying) Increased wakefulness/sleep disturbance Tight muscle tone Hyperactive reflexes Excoriations of skin from excessive movements Frequent yawning and sneezing Rarely seizures
Autonomic nervous system	Hypersensitivity to stimuli Tremors Fever Increased sweating Stuffy nose Mottling Unstable temperature
Gastrointestinal	Poor feeding

system	Uncoordinated suck reflex/constant sucking Vomiting Diarrhoea Dehydration Poor weight gain or weight loss
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Although NAS is an entirely “expected and treatable condition” (ACOG 2017: p.6), it remains an emotive and highly contentious subject (Terplan & Minkoff, 2017), and is in itself a contested diagnostic label. Some countries, especially post-Soviet nations, do not formally recognise NAS (WHO, 2014). Across the globe and within individual countries, there are contradictory approaches to identifying, measuring and treating NAS (Kelly, et al., 2016; O’Grady, Hopewell, & White, 2009); and while NAS is associated with maternal use of drugs, other factors are implicated in symptom severity in highly complex ways. For instance, the correlation between maternal opioid dose (e.g., methadone) and neonatal symptom severity is not straightforward (Cleary, et al., 2010). Some babies born to mothers on high doses of methadone exhibit minimal signs of withdrawal, while others born to mothers on low doses may show more significant signs. Symptoms vary depending on numerous other variables, including: genetic factors; type of drug/s used by the mother (including tobacco and SSRIs); maternal metabolism and net drug transfer across the placenta; placental metabolic rate; infant birth weight and gestational age; infant metabolism and excretion of the drug/s; as well as breastfeeding and the use of supportive comfort measures (Hudak, et al., 2012; WHO, 2014). Consequently, symptoms cannot be accurately predicted at an individual, mother-infant dyad level (Kaltenbach, et al., 2012).

***NAS: attitudes and approaches to maternal drug use during pregnancy***

A key issue in clinical literature pertains to the care of pregnant women and whether or not NAS, or its worst manifestations, can be prevented. However, there is conflicting evidence and little consensus on this issue, as well as historical and ideological factors which continue to plague practice. For example, the ‘choice’ of opioid replacement therapy (ORT) for

mothers has evoked considerable debate, particularly in response to the recent MOTHER study (Jones, et al., 2008), which compared outcomes in babies born to mothers randomised to either buprenorphine or methadone during pregnancy. Buprenorphine resulted in better NAS outcomes than methadone, but the attrition rate in the buprenorphine treatment group was higher. Ensuing disputes about whether buprenorphine should be recommended as ‘the drug of choice’ for pregnant women highlighted tensions between whose body we should be caring about most and what ‘risks’ we should be prioritising – mothers or babies? (McCarthy, Leamon, Stenson, & Biles, 2008).

Complicating matters, previous guidance on the care of pregnant women who are opioid-dependent recommended reduction of methadone to ‘the lowest possible dose’ with some guidance proposing very low, sub-therapeutic levels (<40mgs/day) to avoid NAS (Wolff & Perez-Montejano, 2014). Although this guidance was superseded years ago because of mounting evidence against this advice, its legacy remains (Chandler, et al., 2013). Coupled with the resurgence of drug policies which promote ‘recovery’ (often assumed to mean ‘abstinence’, or at least ‘proven’ drug reduction/stabilisation), current evidence and clinical guidelines on the use of optimal dose, maintenance ORT throughout pregnancy, has been adopted internationally but remains controversial (WHO, 2014).

### ***NAS: caregiving environments and parenting capacity***

NAS is frequently portrayed as a ‘risk factor’ for subsequent child abuse and neglect (De Bortoli, Coles, & Dolan, 2014). It is assumed that mothers and fathers who are drug-dependent will be unable to respond appropriately to the needs of a newborn baby with NAS. Literature on maternal substance use draws attention to ‘chaotic’ lifestyles dominated by drug-seeking behaviour, ‘risky’ or suboptimal caregiving environments, and mothers’ lack of ‘emotional availability’ and/or compromised ability to establish a secure attachment with their infant (Hatzis, Dawe, Harnett, & Barlow, 2017). Fathers and/or male partners are

portrayed as absent, uninvolved, aggressive, uncaring and/or unsupportive of mothers (De Bortoli, et al., 2014). Within a prevailing view that drug use is incompatible with being a good parent, mothers and fathers who are drug-dependent are typically characterised as unfit parents (Benoit, Magnus, Phillips, Marcellus, & Charbonneau, 2015; Whittaker, et al., 2016). Thus, care is orientated towards the requirement for parents, especially mothers, to ‘prove’ themselves worthy (and trustworthy) before they can be free of state intervention (including removal of their infant). Within such a context, the drug-exposed (‘poisoned’) body of the NAS infant becomes an ‘indicator of risk’ - of actual or potential harm (child abuse and neglect) - and abstinence becomes the idealised goal, with the production of ‘clean’ drug toxicology tests, a proxy measure of parenting capacity and being ‘a good enough parent’ (Chandler, et al., 2013).

### ***NAS: Models of Care***

With NAS, the inter-embodiment (Lupton 2012) of infant and caregiver is potentially disrupted, depending on the model of care in place in a given context. Current opinion remains divided on how best to care for infants and families affected by NAS (WHO 2014). The conceptualisation of maternal and neonatal bodies, the closeness or distance of the mother-infant dyad, is central to this. In clinical literature for instance, there is ongoing uncertainty regarding the effectiveness and long term consequences of pharmacological ‘comforts’ to reduce NAS symptoms, and in many cases, clinical guidelines indicate the need for ‘special care’ in neonatal units (NNU) (Grim, Harrison, & Wilder, 2013; WHO, 2014). At one extreme, this includes having infants admitted to the NNU immediately following the birth or symptom onset, entirely separate from contact with the primary caregiver, and isolated in an attempt to minimise light, noise and other stimuli (Boyd, 1999). In contrast, a parallel body of literature argues that NAS babies can be cared for adequately in out-patient settings and at home by the birth mother whenever possible, with the mother supported to

‘room-in’ with her baby, provide ‘skin-to-skin’ contact, breastfeed, and provide supportive attachment-focused infant care (Abrahams, et al., 2007; Knopf, 2016; Kocherlakota, 2014). Within this approach, separation of mother and baby is proactively avoided and there is a distinct ‘low-interventionist’ (non-medicalising) approach.

### ***The wider context of NAS***

Studies which have explicitly addressed the wider social and cultural contexts of caring for NAS babies are sparse, though several ethnographic studies show fear of NAS, and stigma associated with the diagnosis, can affect treatment engagement of pregnant women (Boyd, 1999; Klee, Jackson, & Lewis, 2002; Knight, 2015). These studies suggest babies who exhibit symptoms attributed to NAS are understood to be at greater risk of being removed from the mother. Some qualitative studies have examined neonatal nurses’ experiences of caring for NAS babies (e.g. Maguire, Webb, Passmore, & Cline, 2012; Murphy-Oikonen, Brownlee, Montelpare, & Gerlach, 2010) and report a fairly negative and conflicted picture, with staff struggling to engage positively with families, and problematic attitudes towards parents/mothers who are drug-dependent. Two studies (Atwood, et al., 2016; Cleveland & Gill, 2013) conducted in the USA, explored the views of parents, revealing low levels of parental education and preparation for NAS, inconsistent and contradictory approaches to care of mother and baby, heightened feelings of stigma, guilt and blame, and the importance of good quality relationships and communication with neonatal staff.

### ***Study aim and theoretical approach***

This study aimed to explore ‘logics of care’ (Mol, 2008) that govern pregnant women who use drugs and babies at risk of NAS in Scotland, UK. In this paper, we focus on ways in which risk and recovery are represented and responded to, within the context of maternal drug use, child welfare and family life.



Our analysis is informed by feminist, materialist and poststructuralist theories. While drawing on accounts of NAS, we attend to how these represent the “socio-material arrangements” through which NAS is produced (Fomiatti, Moore, & Fraser, 2017). This includes how parents’ account for interactions with services during and after pregnancy, and the particular ‘logics of care’ which are referred to by parents and professionals. Mol’s (2008) logic of care refers to the complex ways in which ‘good’ healthcare is enacted. Her analysis contrasts this with a logic of choice, a logic she argues is erroneous, as it assumes the existence of rational, autonomous patients, and linear processes of evidence gathering and decision-making. A logic of care, Mol suggests, allows for consideration of the complex ways that healthcare can operate, dealing as it does with systems, relationships, practices, values, emotions, structures, technology and individual, sometimes ill, bodies which have diverse lives. In our usage of the concept, we view this as multiple, thus we consider *logics* of care. In this way, we examine the ways in which accounts of practices relating to NAS do orient around care (e.g., care of the baby, care of the mother/father, care of mother-infant dyad) but in different ways, and with different implications for different actors involved (e.g., mothers, fathers, infants, professionals). The focus of enquiry in this paper centres on exposing some of the different logics of care governing responses to NAS and how these are shaped by contested and contradictory understandings of risk and recovery.

## Methods

### *Design*

Our paper draws on data generated in a qualitative study involving interviews with parents (mothers who are opioid-dependent and their partners) and focus groups with health and

social care practitioners who work with families affected by NAS. Ethical approval was granted by the local NHS Research Ethics Committee.

### ***Study setting***

The study was conducted in Scotland, UK, from December 2014 – August 2015, with participants drawn from a major city, and neighbouring towns. The area included community-based addiction, maternity and child health services, two neonatal units (in separate hospitals), and a specialist multiagency home-visiting service for pregnant women who are drug-dependent. All the families in the study had access to ‘universal health care’ (e.g. GP, midwifery, child health and neonatal services) and specialist secondary health care (e.g. addiction treatment), free of charge, as part of the UK National Health Service (NHS). This includes Opioid Replacement Therapy (ORT) – usually methadone or buprenorphine - provided by either community-based addiction treatment services or the GP, with medications dispensed via local pharmacy.

### ***Parent participants and interviews***

We conducted in-depth semi-structured interviews with a purposive sample of 16 parents, including two single mothers and seven mother-father dyads (interviewed separately because of the highly sensitive and potentially emotive nature of the discussion). All the mothers were prescribed ORT and were recruited via community drug treatment, midwifery and child health services. Fathers/partners were invited to take part if the mother agreed to their involvement in the study. Parents were interviewed between two weeks and six months after the birth of their baby and were provided with a £20 gift voucher to cover out-of-pocket expenses. Interviews were conducted by [AC], lasted approximately 60-90 minutes, and explored understandings of NAS and experiences of caring for a baby at risk of NAS as well as topics related to the parents’ drug use and drug treatment, social and economic

circumstances, contextual features of their lives, and experiences engaging with health and social services during and after pregnancy, with a particular focus on NAS.

A profile of parent participants is included in Table 2. Aged between 23 and 41, all but two had older children. In the majority of cases, older children were living elsewhere (foster care, kinship care, or with ex-partners). Thus, while all participants had custody of their most recent baby, six of the nine mothers (and one father) did not have parental responsibility for their older children. Fathers with older children described previous relationships where their ex-partner retained child custody and contact with these children was sporadic or absent. At the time of interview, all but one parent (a mother on maternity leave) were on various forms of welfare benefits. All parents were living in rented social housing, and many described recent experiences of housing insecurity or homelessness.

Table 2: Profile of parents in study

Pseudonym	Age	Family	Drug use/history
Joanne	34	Mike's partner. Older child/ren in foster care	Methadone prescription History of heroin and alcohol use
Mike	41	Joanne's partner. Older child/ren living with ex-partner	Methadone prescription Hx Heroin
Hayley	23	Liam's partner. First child.	Dihydrocodeine prescription Hx Heroin
Liam	34	Hayley's partner. Older child/ren living with ex-partner	Dihydrocodeine prescription Hx Heroin and alcohol use
Liz	35	Single mother. Older child/ren at home	Methadone prescription Hx Heroin
Kelly	36	Single mother. Older child/ren living at home and in kinship care	Methadone prescription Hx Heroin
Heather	40	Craig's partner. Older child/ren in kinship care	Methadone prescription Hx Benzodiazepine use
Craig	40	Heather's partner. Older child/ren in kinship care	Methadone prescription Hx Heroin
Shelley	35	Ryan's partner. Older child/ren living at home	Buprenorphine prescription Hx Heroin
Ryan	36	Shelley's partner. Older child/ren living with partner	Methadone prescription Hx Heroin

		and ex-partner	
Carla	31	Miles' partner. Older child/ren in kinship care	Methadone and diazepam prescription Hx Heroin
Miles	32	Carla's partner. First child	Abstinent No history of drug use reported
Eilidh	28	Stuart's partner. Older child/ren with ex-partner	Methadone and diazepam prescription Hx Heroin, Gabapentin,
Stuart	38	Eilidh's partner. Older child/ren with ex-partner	Methadone prescription Hx Heroin
Morven	34	Freddie's partner. Older child/ren in kinship care and with ex-partner	Methadone prescription Hx Heroin
Freddie	47	Morven's partner. Older child/ren with ex-partner	Abstinent Hx Heroin

### ***Professional participants and focus groups***

Alongside these interviews, four interdisciplinary focus groups with 27 health and social care practitioners were conducted. Focus groups were chosen because they are considered the 'method of choice' when the aim is to explore and examine group interaction, group processes, meanings and norms and where consensus and/or debate between participants is important (Barbour, 2007). Professionals were invited to take part on the basis of known experience working in this area – either with parents who are drug-dependent, their infants or both - with care taken to include a mix of community and hospital-based practitioners who normally engage with families as part of 'multi-disciplinary care pathway'. Focus groups explored participant's understandings of NAS, experience of preparing parents for a baby with NAS, including monitoring and treatment of mother and baby, and sought to engage group members in deliberative discussion and debate about these issues. They were jointly conducted by [AC] and [AW] and lasted approximately one hour.

A profile of the four focus groups is included in Table 3. Of the 27 participants, 21 were NHS (healthcare professionals) and 6 were Social Care staff, 23 were female, 4 male, and disciplines included: community midwives, postnatal midwives, neonatal nurses, health

visitors (community child health nurses), community mental health (addiction) nurses, a general medical practitioner (GP), consultant psychiatrist in addictions, consultant obstetrician, consultant neonatologist and qualified social workers in community and hospital ‘Children and Families’ teams and foster care services. Participants also included health and social care staff from a community-based specialist pregnancy service for women with alcohol and drug problems.

Table 3: Practitioners in focus groups

<b>FG01</b> Midwife (Community) Neonatal Nurse Neonatal Nurse Addiction Nurse Addiction Nurse General Practitioner Health Visitor	<b>FG02</b> Social Worker Social Worker Midwife (Community) Health Visitor Addiction Nurse Addiction Nurse
<b>FG03</b> Social Worker Social Worker Early Years Worker Addiction Nurse Health Visitor	<b>FG04</b> Foster Care Social Worker Midwife (Postnatal) Midwife (Postnatal) Neonatal Nurse Health Visitor Addiction Nurse Neonatologist Obstetrician Addiction Psychiatrist

### ***Data analysis***

Interviews and focus groups were audio-recorded, transcribed verbatim, anonymised, and uploaded to NVivo v10 to support data coding and management. Data were coded and analysed by [Author1] and [Author2], using inductive content and thematic coding, and informed by narrative and discursive approaches - focusing on stories and the construction of meaning, subjectivities, representations and performative work. A constant comparative method (Silverman, 2014), was then used to compare and contrast discourses and themes

across the data sets – for example, differing representations of the NAS baby, mother and father, practices in relation to observing and ‘scoring’ the baby and ‘drug testing’ the mother, and discourses surrounding ‘medication-assisted’ recovery and the treatment and care of the mother and mother-infant dyad. Analytic summaries were discussed and deliberated upon at monthly research group meetings and implications of the findings were considered within the context of current and alternative models of care.

## Findings

Multiple and contradictory versions of risk and recovery emerged in the accounts of parents and professionals. In our analysis we illustrate how these discourses served to both compel and trouble all logics of care surrounding NAS - primarily in relation to what might be understood, and enacted upon, as forms of ‘accepted knowledge’ and ‘effective interventions’ during pregnancy and after the baby is born. For example, ‘risk reduction’ strategies, ‘monitoring’ and surveillance methods, ‘drug management’, treatment and care of mother and baby, and ‘safeguarding’ approaches governing parental caregiving.

### *Producing and troubling antenatal logics of care*

Questions about NAS consistently led to discussion and debate regarding the *causes* of NAS and the extent to which maternal drug use during pregnancy (including ‘compliance’ with drug treatment plans) played a role in the likelihood of NAS being ‘severe’.

On the one hand, participant stories about antenatal care served to demonstrate and reiterate ‘current’ thinking about the causes of NAS, such as why some babies develop severe symptoms and others do not. Most professionals, for instance, acknowledged that severity of NAS was not directly related to ORT dose or the amount of opioid drugs the mother was taking, meaning that the ability to fully predict, and therefore avoid NAS was impossible to do. Emphasis instead was placed on the unpredictability of NAS:

I think that's one of the hardest things, you can never predict just how badly a baby can withdraw. You can look at mum's drug use and think, this baby is going to be really bad and it turns out the opposite. (Neonatal Nurse, FG1)

One mother reiterated a version of this message:

You could be on a really low dose of [opioid] and your baby could have really bad symptoms or the other way about. It just kind of, totally depends on the baby itself. Everybody's different. That's all I'd really been told, just try not to ...get too stressed about it. (Hayley, mother)

However, accounts also cast doubts about this perceived wisdom by drawing attention to contradictory beliefs and practices and other explanatory possibilities. For example, the belief that illicit drug use and by inference, the 'misbehaviour' or drug-addicted pregnant women, might be the real cause of severe neonatal withdrawal symptoms:

It can be difficult when the baby ...does have NAS, for professionals who maybe have some limited knowledge to automatically go well, that means she's been taking extra drugs during her pregnancy ...I've had to explain well, we don't know that. We can't then go and write that in [child protection] reports. It could be just, that this is a baby that is more susceptible ...that's what I've found difficult with a recent case ...professionals jumping to conclusions and then saying that in front of the parent, when the parent's had that information from the Neonatal Unit that actually, there isn't a direct correlation. But there's a chance that she was taking extra [drugs] during her pregnancy ...there's a lot of unknowns, and I suppose when you're planning for the future of the baby that's difficult' (Social Worker, FG2)

This performative work (Fomiatti et al, 2017), served to both uphold and subvert logics of care, drawing on the rhetoric of governing risk and 'risky parents' (Featherstone et al, 2014).

In the excerpt above, for example, 'unknowns' about maternal drug use could explain professionals erroneously 'jumping to conclusions' about the cause of NAS being attributable to the misbehaviour of drug-addicted mothers when 'actually, there isn't a direct correlation'.

At the same time, 'unknowns' about maternal drug use could justify caution when making decisions about the future safety and wellbeing of an NAS baby. Conversely, both logics of care invite a focus on risk and responsibility (identifying 'susceptible' or vulnerable babies and unfit mothers who take 'extra' drugs) and infer that the cause of NAS is perhaps

something that ‘we don’t know’ (despite the ‘Neonatal Unit’ saying otherwise). Introducing uncertainty, can be seen as a rhetorical device to construct an array of different subject positions and material realities (reckless mother who is to blame for her infant’s poor condition or just a predisposed baby whose innocent mother is being unfairly accused of neglect). These logics of care obscure however, other ways of representing the baby with NAS and responding to the mother-infant dyad – for example, by focusing on meeting the care needs of the infant, and providing appropriate family support to facilitate mother-infant caregiving. What was foreground in professional accounts was identifying and managing (governing) risk, *not* the meeting of need. Noticeably, it was not simply about clinical ideas on cause and effect, since these were contested and contradictory. Rather, professionals were speaking to wider social, political and moral positions on working with families affected by drug use, including the role of the state in family life.

Professional accounts which unsettled ideas about whether or not NAS severity was related to the mother’s illicit drug-taking behaviour (and therefore whether or not she was ‘to blame’ for her infant’s condition) were echoed in parents’ accounts:

I always thought that the reason the baby was withdrawing [was] because they [mothers] were on methadone and using on top [illicit drug use]. (Shelley, mother)

Just luck nae doubt ...[but] it probably depends what the mum’s been up to. If the mum’s been taking more drugs ...most people you speak to [will] lie to you about what they’ve taken. (Liam, father)

Parents’ also spoke about their fear of losing custody of the baby if NAS was identified, despite feeling that they couldn’t do anything to prevent it. Fear of being blamed for their infant’s condition, and self-blame, was accompanied by an acute awareness of the stigma associated with maternal drug use, and being judged an unfit mother:

Before I had [the baby], if somebody said aye, their baby had withdrawn, I’d be like, that’s shocking. Why could you no’ get yourself sorted out, and get off the methadone and the drugs. But even I did it, so aye ...basically people are just this, scummy,



basically because their baby's withdrawing ...[but] there's more issues to it. (Joanne, mother)

How I saw it, if the baby's got NAS you aren't getting your baby ...I was just visualising the baby care unit ...standing there, my baby screaming, no' well ...riddled with guilt, and blaming [partner] ...that was my visual ...signs of NAS, take a count, [NAS score] too high, baby care unit, and that's that ...and very judgemental, [like] the way they treated [partner] in the hospital. (Freddie, father)

Representations of mothers who are drug-dependent as liable, or potentially liable, for their infant's 'vulnerable' condition, invoked logics of care that centred on risk reduction and risk management strategies and elicited narratives which appealed to the value of treatment regimens and regulatory practices to 'assess' and 'manage' these risks. For example, 'stability' on ORT and drug testing pregnant mothers in an attempt to either prove, or disprove, illicit drug use:

Different people have different opinions ...I had a patient who appeared stable [on methadone], I mean, she was testing negative whenever I took drug screens and her baby was very, very, very, unwell ...and some professionals have been saying, well she was obviously abusing [illicit drugs] then. But, there wasn't any evidence that she was. (Addiction Nurse, FG1)

While most participants acknowledged that ORT was an 'accepted' treatment during pregnancy and would likely benefit mother and baby - for example, through better 'engagement' with services and access to 'recovery-orientated' services – '*stability*' was repeatedly emphasised and conflated with better outcomes for the baby *in relation to NAS*. From this perspective, the requirement to remain 'stable' became a moral imperative, signifying affirmative action to reduce NAS risks. Some parents appealed to these moral discourses and conveyed the idea that mothers who 'chose' to take illicit drugs, rather than comply with OST regimens, ought to be harshly judged (and ashamed of their behaviour):

So-called friends that have chosen drugs over their children, they know exactly what they're doing ...they know their baby's going to come out rattling [withdrawing] ...it disgusts me to a certain extent ...I'm not one to preach, 'cause my baby had NAS as

well, but we made a choice to stay maintained [on methadone] ...to keep her chances of it [NAS] being low. (Stuart, father)

I've seen with other mums, one [women I know] ...still kept dabbling [taking illicit drugs], compared to me ...like just sticking with methadone, and she's no' getting her baby home ...well it's in the [neo]natal unit now so it's like ...your baby's really sick even though you knew the risks. (Joanne, mother)

Similarly, professional accounts questioned the extent to which pregnant women who are opioid-dependent can 'control' their drug use, make 'lifestyle choices' and are 'motivated to change' for the 'right' reasons. Shifting positions constructed mothers in contrasting ways - for example, as 'vulnerable', as untrustworthy, as responsible, and as rational and capable actors and decision-makers. The issue of whether mothers could simply 'decide' to remain 'stable', or reduce or maintain abstinence (and elect to embark on a 'recovery journey'), or continue to use illicit drugs, was woven into stories about emotional responses to NAS:

We actually bought a [NAS] withdrawing doll ...it's a real shocker for the women ...it shakes and it screams, the high pitch scream, and they see it, and it's very visual, and it works. I don't know if it totally works for them, to stopping [illicit] drugs ... [but] two or three [women] every time we do it, start crying, really upset. ...It's too late obviously, when we show the dolls, but then sometimes it's enough just to say right, the rest of the pregnancy, I might abstain from heroin. (Midwife, FG1)

There's no empathy ...people just don't appreciate what these women have been through ...you know, their upbringing, their life, what's brought them to this point ...a lot of staff ...think it's a lifestyle choice, they choose to take drugs ...but it's not as straightforward as that ...and if you throw domestic violence in ...childhood sexual abuse ...horrendous things ...it's not a lifestyle choice, who would choose that life?, nobody does ...I don't condone it, but I can understand it. (Neonatal Nurse, FG1)

These accounts served to both support and refute logics of care that either apportioned or relinquished individual responsibility for risk-taking behaviour and recovery, and in doing so, maintained a focus on maternal 'risk factors' rather than other factors which might play a role in pregnancy and neonatal outcomes, including quality of care.

In fact, few participants articulated the dilemma that most mothers faced: if they followed advice to remain ‘stable’ on an optimum ORT dose during pregnancy, they would likely benefit from better overall outcomes for themselves and their infant, but they *would* produce a baby ‘at risk’ of NAS. Should their baby then develop symptoms, and be diagnosed an ‘NAS baby’, they would likely be blamed for the infant’s condition. One father grappled with this ‘catch 22’ situation:

If we knew [the baby] ...was going to be twitching, she could have had the methadone reduced, but then again ...you can’t have the methadone reduced if you weren’t stable ...it’s a catch 22 she was in, so ...I don’t blame her, I blame the [drug treatment service]. (Mike, father)

Stories which focused on maternal drug use and ‘the nature of addiction’ (e.g., compliance with drug treatment, illicit drug use, recovery and ‘relapse’) invoked logics of care which centred on the need to address the mother’s *psychopathology* (e.g., her ‘motivation’, decision-making, drug-taking behaviour, poor parenting, trauma, denial etc) and her *accountability* in relation to NAS. Again, contradictory discourses were evident with stories about the need to help mothers with their various psychological and behavioural problems contrasted with the need for the mother to simply demonstrate ‘evidence’ of ‘change’ and ‘moving on’. This included an emphasis on mothers ‘accepting’ that their baby had NAS (even if symptoms were ambiguous) and acknowledging ‘the damage that’s actually been done’.

[It’s] difficult for parents as well, because if they can’t take responsibility for their drug use during pregnancy, I think it can be very hard once baby is born and the guilt that they feel, to then help them to start to take some responsibility for that. (Social Worker, FG4)

We do get a few woman ...that don't acknowledge [the baby has NAS], and they will try anything else to say, oh it's feeding problems, it's not to do with NAS, and we do try and tell them it is, because it is quite important for them to acknowledge that it is. (Midwife, FG1)

### ***Producing and troubling postnatal logics of care***

Discourses on ‘risk’ and ‘recovery’ relating to the postnatal period centred on two key issues which were typically intertwined: the ‘vulnerable’ infant body, potentially suffering from severe NAS symptoms, who needed to be closely observed, protected and cared for (by competent and responsible adults) and; ‘evidencing’ parenting capacity in relation to the ‘vulnerable’ baby. This elicited accounts which focused on ‘processes and procedures’ for identifying and treating NAS, and scrutinising and evaluating mother-infant caregiving. Intensive ‘monitoring’ (e.g., observing and ‘scoring’ the baby, surveillance of the mother) were taken for granted aspects of care, as was the need for admission to the Neonatal Unit should the infant display NAS symptoms. However, views and experiences of this ‘accepted’ model of care were not always consistent or compatible. For example, some parents reported feeling marginalised and had no prior knowledge of the ‘NAS score chart’ and little or no involvement in ‘scoring’ the baby for symptoms of NAS in the postnatal ward.

They didn’t even tell me they were doing the test [NAS score] half the time. I just knew because ...they would fill out the wee thing [NAS chart] in front of you, but they never ever let you see it. I had to ask to see it. (Shelley, mother)

I didn’t get like, this is a NAS chart, and this is blah, blah, blah ...I didn’t get any of that. ...Craig was clueless too about it ...and he likes to know everything too. (Heather, mother)

For most parents, time in the postnatal ward was characterised as a period of ‘watchful waiting’, to see whether their baby would exhibit signs of NAS. Many portrayed their baby as vulnerable (e.g. ‘helpless’) and drew on their own embodied experiences of addiction and withdrawal, imagining these in the bodies of their baby (‘suffering’, ‘in pain’ and ‘addicted’):

You don’t know how bad they’re going to be, ‘cause you’ve sort of, withdrawn yourself in the past, and you know how bad it can get, you think, God is your baby going to be like that. Can they fight it? Will they be alright? (Liz, mother)

You don’t know if it’s [a normal baby crying], or is it rattling? ...but it was just a wee bit more than that ...because you seen it ...it was a horrible squeal ...you knew [she] was in pain ...[and] you just want to take it off them, and you can’t. (Ryan, father)

I read all about [NAS] ...and I just know ...[our baby's] probably nine times more likely to become an addict ...So, I need to nurture this baby, man ...because she was born an addict, she's an addict. We'll not be able to stop it. (Freddie, father)

Accounts of the scoring process formed part of a logic of care that served to underline the view that babies at risk of NAS are not 'normal' and drug-using parents are not capable of attending to their infants' needs. Some parents echoed these concerns and revealed how they anticipated suspicions (and allegations) about inadequate parenting and engaged in practices which might 'prove' their innocence:

I carried on doing her feeding chart [at home] ...'til [baby was] at least three months, just in case her weight was to drop again, and we don't want people to say, well you've been neglecting your child. I'll say, well no, 'cause that's what she's been eating, so it must be a metabolism problem, so I want her checked out. (Stuart, father)

While some professionals emphasised multiple 'increased risks' posed by NAS, others raised questions about the whole basis on which NAS, and the care of the family as a whole, was represented, and the extent to which existing logics of care address wider issues, including broader societal views about maternal drug use:

[In the neonatal unit] we very rarely see such severe withdrawal symptoms ...that put the baby's health at risk, and there's ...no real evidence that it really does ...there's no doubt these children have worse outcomes, but ...which bit of the package is that due to?, whether that's due to the whole, sort of, messed up lifestyle, antenatal consumption of drugs ...the diet that goes with it, and then the care that [parents] give once the child's actually home. The withdrawal is only a symptom, if you like, that this, sort of, abnormal practice of taking drugs in pregnancy has happened ...neonatal abstinence is only a little bit of the picture, isn't it. I don't think neonatal abstinence in itself, is such a big problem. (Medic, FG4)

The most significant tension between participants however, particularly between health and social care practitioners, was differing views on the concept of 'recovery' (including 'medication-assisted recovery') and what this constituted in terms of drug-taking behaviour, parenting capacity and child welfare. This tapped into the fundamental question of whether or not continued drug use (even if 'stable' on ORT) is compatible with 'good enough' parenting.

For example, ‘medication-assisted recovery’ or ORT, based on a ‘harm reduction’ approach, was presented by some as acceptable and indeed desirable for parents and pregnant women, whereas reduction in consumption and ‘evidence’ that the mother was ‘working towards abstinence’ was presented as essential by others. The following exchange illustrates this tension:

We've got a mum ...and she had been using illicit [drugs], she's gone onto a methadone prescription, she was only at the beginning stages of being titrated and the social worker's demanding to know when she would be having a detox to come off!...I just felt like the social worker hadn't obviously had that education ...on harm reduction ...we do set them up to fail because we're asking them to achieve the unachievable ...[and] we're going to cause them to relapse. (Addiction Nurse, FG2).

That comes down to social work because we're evidence led, in terms of our parenting, because if we have a child at risk of significant harm we're building an evidence picture to say ...whether the child can remain in that home environment or be removed ...we're needing evidence of that and that's putting families under quite a lot of stress, because they're dealing with the addiction ...[and that] can be quite difficult, because we're looking at form filling, doing reports, doing risk assessments and categorising it ...because we ultimately need a journey, and if we're not having a journey, well, then the child is left to suffer. (Social Worker, FG2)

These accounts illustrate how contested and contradictory understandings of risk and recovery within the context of NAS are closely entwined, and serve to undermine (and silence) logics of care, including other, alternative ways of conceptualising, articulating and enacting care.

## Discussion

This article has demonstrated how competing discourses on risk and recovery emerge in parents’ and professionals’ accounts of NAS. Differing notions of risk and recovery served to both compel and trouble all logics of care that govern pregnant women who use drugs and the care of the infant and mother-infant dyad in the postnatal period. Representations of NAS babies as ‘vulnerable’ and ‘at risk’ – whether actual, suspected or potential – and disputed

ideas about what constitutes ‘evidence’ of recovery in pregnant women and mothers who are opioid-dependent, served to explain (and justify) risk management strategies that involved caution, intervention and control (such as increased scrutiny and surveillance of the bodies of babies and mothers). A focus on reducing risks of NAS enrolled parents and professionals into practices which served to monitor parental (maternal) drug use. Mothers were required to both ‘stabilise’ on prescribed opioid therapy and to articulate a desire (if not enact) reduction in dosage. At the same time, competing ideas about what recovery might mean, and the spectre of ‘recovery as abstinence’, meant that whatever mothers did regarding drug use in pregnancy, they were at risk of being viewed unfit and to blame for their infant’s condition. The practice of seeking to maintain drug use, or even increase levels of methadone during pregnancy in order to minimise harm, rather than aiming to reduce or come off prescription drugs, goes to the heart of ideological debates between harm reduction versus abstinence as the ultimate goal of drug treatment programmes. This is especially so in relation to pregnant women, where the health and wellbeing of the baby is also at stake. The more recent translation (and attempted convergence) of these contrasting goals into ‘recovery journeys’ and ‘recovery-orientated systems of care’, proposed in many drug and family-focused policies (Scottish Government, 2013) denies the real tensions inherent in differing attitudes towards ongoing drug use during pregnancy and different drug treatment approaches for pregnant women. For example, within the context of pregnancy and parenting, the notion of ‘medication-assisted recovery’ (Strang, 2012), can jar with child welfare policies which seek to promote ‘drug free childhoods’ (U.S. Department of Justice and Education, 2017); and studies involving drug-dependent parents demonstrate how the meaning of recovery is contested within the context of parenthood (Radcliffe, 2011).

Our research has significant implications for current practices of care oriented towards supporting families whose babies are at risk of NAS. Treatment and care approaches which

advocate intensive and intrusive interventions and in-patient care are extremely costly with little or no evidence of significant benefit to the baby or mother-infant dyad, either in the short or longer-term (Knopf, 2016). Our findings lead us to question the logics of care that such approaches entail. We propose a radical rethink in research, policies and practices around women who use drugs whereby existing logics of care themselves become the focus of inquiry (rather than the bodies of mothers and babies). Instead, we suggest a greater emphasis on identification and evaluation of systems where supportive caregiving environments for families and strengths-based approaches are possible (instead of a focus on parental drug use, deficits, risk and responsibility). This approach would require a shift away from the current focus on (addicted) maternal bodies and (vulnerable) neonatal bodies, looking more broadly at social, economic, moral, discursive and relational contexts which produce and govern such bodies.

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## References

- Abrahams, R. R., Kelly, S. A., Payne, S., Thiessen, P. N., Mackintosh, J., & Janssen, P. A. (2007). Rooming-in compared with standard care for newborns of mothers using methadone or heroin. *Canadian Family Physician*, 53, 1722-1730.
- American College of Obstetrics and Gynecologists, A. (2017). Opioid Use and Opioid Use Disorder in Pregnancy. In *ACOG Committee Opinion: American College of Obstetrics and Gynecologists*.
- Atwood, E. C., Sollender, G., Hsu, E., Arsnow, C., Flanagan, V., Celenza, J., Whalen, B., & Holmes, A. V. (2016). A Qualitative Study of Family Experience With Hospitalization for Neonatal Abstinence Syndrome. *Hospital Pediatrics*, 6, 626-632.
- Barbour, R. (2007). *Doing Focus Groups*, London; SAGE.
- Benoit, C., Magnus, S., Phillips, R., Marcellus, L., & Charbonneau, S. (2015). Complicating the dominant morality discourse: mothers and fathers' constructions of substance use during pregnancy and early parenthood. *International Journal for Equity in Health*, 14, 72.
- Boyd, S. C. (1999). *Mothers and Illicit Drugs: Transcending the Myths*. Toronto: University of Toronto Press.
- Chandler, A., Whittaker, A., Cunningham-Burley, S., Williams, N., McGorm, K., & Mathews, G. (2013). Substance, structure and stigma: Parents in the UK accounting for opioid substitution therapy during the antenatal and postnatal periods. *International Journal of Drug Policy*, 24, e35-e42.
- Chandler, A., Whittaker, A., Williams, N., McGorm, K., Cunningham-Burley, S., & Mathews, G. (2014). Mother's little helper? Contrasting accounts of benzodiazepine and methadone use among drug-dependent parents in the UK. *Drugs: Education, Prevention, and Policy*, 21, 470-475.

- Cleary, B. J., Donnelly, J., Strawbridge, J., Gallagher, P. J., Fahey, T., Clarke, M., & Murphy, D. J. (2010). Methadone dose and neonatal abstinence syndrome—systematic review and meta-analysis. *Addiction*, *105*, 2071-2084.
- Cleveland, L. M., & Gill, S. L. (2013). "Try Not to Judge": Mothers of Substance Exposed Infants. *American Journal of Maternal Child Nursing*, *38*, 200-205.
- De Bortoli, L., Coles, J., & Dolan, M. (2014). Linking illicit substance misuse during pregnancy and child abuse: what is the quality of the evidence? *Child & Family Social Work*, *19*, 136-148.
- Featherstone, B., Morris, K., & White, S. (2014) A Marriage Made in Hell: Early Intervention Meets Child Protection. *British Journal of Social Work*, *44*, 1735–1749.
- Fomiatti, R., Moore, D., & Fraser, S. (2017). Interpellating recovery: The politics of 'identity' in recovery-focused treatment. *International Journal of Drug Policy*, *44*, 174-182.
- Fraser, S., & valentine, k. (2008). *Substance and Substitution*. Basingstoke: Palgrave Macmillan.
- Grim, K., Harrison, T. E., & Wilder, R. T. (2013). Management of Neonatal Abstinence Syndrome from Opioids. *Clinics in Perinatology*, *40*, 509-524.
- Hatzis, D., Dawe, S., Harnett, P., & Barlow, J. (2017). Quality of Caregiving in Mothers With Illicit Substance Use: A Systematic Review and Meta-analysis. *Substance Abuse: Research and Treatment*, *11*, 1178221817694038.
- Hudak, M. L., Tan, R. C., Frattarelli, D. A. C., Galinkin, J. L., Green, T. P., Neville, K. A., Paul, I. M., Van Den Anker, J. N., Papile, L.-A., Baley, J. E., Bhutani, V. K., Carlo, W. A., Cummings, J., Kumar, P., Polin, R. A., Wang, K. S., & Watterberg, K. L. (2012). Neonatal Drug Withdrawal. *Pediatrics*, *129*, e540-e560.

- Jones, H. E., Martin, P. R., Heil, S. H., Stine, S., Kaltenbach, K., Selby, P., Coyle, M. G., O'Grady, K. E., Arria, A. M., & Fischer, G. (2008). Treatment of Opioid Dependent Pregnant Women: Clinical and Research Issues. *Journal of Substance Abuse Treatment*, 35, 245-259.
- Kaltenbach, K., Holbrook, A. M., Coyle, M. G., Heil, S. H., Salisbury, A. L., Stine, S. M., Martin, P. R., & Jones, H. E. (2012). Predicting treatment for neonatal abstinence syndrome in infants born to women maintained on opioid agonist medication. *Addiction*, 107 Suppl 1, 45-52.
- Kelly, L. E., Jansson, L. M., Mouldsdale, W., Pereira, J., Simpson, S., Guttman, A., Allegaert, K., Askie, L., Roukema, H., Lacaze, T., Davis, J. M., Finnegan, L., Williamson, P., & Offringa, M. (2016). A core outcome set for neonatal abstinence syndrome: study protocol for a systematic review, parent interviews and a Delphi survey. *Trials*, 17, 536.
- Klee, H., Jackson, M., & Lewis, S. (2002). *Drug misuse and motherhood*. London: Routledge.
- Knight, K. R. (2015). *addicted. pregnant. poor*. Durham: Duke University Press.
- Knopf, A. (2016). Baby's mother is the best treatment for neonatal abstinence syndrome. *Alcoholism & Drug Abuse Weekly*, 28, 1-4.
- Kocherlakota, P. (2014). Neonatal Abstinence Syndrome. *Pediatrics*, 134, e547-e561.
- Lupton, D. (2012). Infant embodiment and interembodiment: A review of sociocultural perspectives. *Childhood*, 20, 1, 37-50.
- Maguire, D., Webb, M., Passmore, D., & Cline, G. (2012). NICU Nurses' Lived Experience: Caring for Infants With Neonatal Abstinence Syndrome. *Advances in Neonatal Care*, 12, 281-285 210.1097/ANC.1090b1013e3182677bc3182671.
- McCarthy, J. J., Leamon, M. H., Stenson, G., & Biles, L. A. (2008). Outcomes of neonates conceived on methadone maintenance therapy. *Journal of Substance Abuse Treatment*, 35, 202-206.

- McQueen, K., Murphy-Oikonen, J., & Desaulniers, L. (2015). Maternal Substance Use and Neonatal Abstinence Syndrome: A Descriptive Study. *Maternal and Child Health Journal*, 19, 1756-1765.
- Mol, A. (2008). *The Logic of Care: Health and the problem of patient choice*. London: Routledge.
- Murphy-Oikonen, J., Brownlee, K., Montelpare, W., & Gerlach, K. (2010). The Experiences of NICU Nurses in Caring for Infants with Neonatal Abstinence Syndrome *Neonatal Network: The Journal of Neonatal Nursing*, 29, 307-313.
- O'Grady, M. J., Hopewell, J., & White, M. J. (2009). Management of neonatal abstinence syndrome: a national survey and review of practice. *Arch Dis Child Fetal Neonatal Ed*, 94, F249-252.
- Radcliffe P. 2011. Motherhood, pregnancy and the negotiation of identity: The moral career of drug treatment. *Social Science & Medicine*, 72, 984-991.
- Scottish Government 2013. Getting our priorities right. Edinburgh: Scottish Government.
- Silverman, D. (2014) *Interpreting qualitative data*. London, SAGE.
- Strang, J. (2012). Medications in recovery: re-orienting drug dependence treatment. In: NHS National Treatment Agency for Substance Misuse.
- Terplan, M., & Minkoff, H. (2017). Neonatal Abstinence Syndrome and Ethical Approaches to the Identification of Pregnant Women Who Use Drugs. *Obstetrics and Gynecology*, 129, 164-167.
- U.S. Department of Justice and Education. (2017). Growing up Drug Free: A Parent's Guide to Prevention. In: U.S. Drug Enforcement Administration, U.S. Department of Education.
- Whittaker, A., Williams, N., Chandler, A., Cunningham-Burley, S., McGorm, K., & Mathews, G. (2016). The burden of care: a focus group study of healthcare practitioners in

Scotland talking about parental drug misuse. *Health & Social Care in the Community*, 24, e72-e80.

WHO. (2014). Guidelines for identification and management of substance use and substance use disorders in pregnancy. In. Geneva: World Health Organisation.

Wolff, K., & Perez-Montejano, R. (2014). Opioid neonatal abstinence syndrome: controversies and implications for practice. *Curr Drug Abuse Rev*, 7, 44-58.